
Remarks

Claims 1-10 are pending. Claims 7-10 have been withdrawn from consideration and claims 1-6 have been rejected. In response, applicants amend the claims to bring them into condition for allowance. Applicants add new claim 11 to clarify a claim term discussed by the examiner in the last office action. Further comments are provided that describe how amendments meet the Examiner's rejections and place the claims in condition for allowance.

Rejections under 35 U.S.C. § 102

Claims 1-6 remain rejected on alleged anticipation grounds in view of a patent from the same inventors that describes solvent extraction of carotenoid pigment from culture media.

Distinguishing features over the cited reference are clarified

In responding to applicants' last amendment and arguments, the examiner stated on page 3 of the office action that "the instant claims are not method claims, but composition claims.....(and) [t]hat it is only an intermediate in the prior art is of no patentable consequence." In response to this comment and to bring the claims in better condition for allowance, applicants amend the claims further by maintaining the original claim elements and adding further recited features that 1) the claimed material is cellular and 2) the material is formed by certain process steps. The amended claims 1 to 6 thus recite a different process that involves centrifugation or filtration and drying that leaves the cell membrane, cell wall and the like intact, and a different material (cellular material made by the process) from that described in the U.S. 5,607,839 reference.

The added product by process language addresses the examiner's principal comments in the office action (page 2) regarding the definition of "precipitate." With the addition of product by process language, the amended claims are brought into condition

for allowance by adding functional language that further delineates the meaning of "precipitate" and distinguishes over the cited art. Reconsideration and removal of the anticipation rejection is requested in view that the cited art lack these distinguishing features,

Dried cellular material containing the Carotenoid is missing in the asserted reference

The amended claims recite a cellular product, namely, dried cells that are enriched in carotenoids. The specification throughout describes the product as a cellular material. For example, page 7 line 7 states "dried cell." The cited reference U.S. 5,607,839 does not teach or use dried cellular material, but, employs centrifugation, followed by decanting and solvent extraction to form a dried non-cellular material where membranes are not intact. In contrast, dried "cellular" material with intact membranes and having high carotene content is a new feature of the claimed invention that is recited in the claims.

The reference does not contain cellular material inherently because the reference provides no material or process that unavoidably must require formation of dried intact cellular material as now recited in claims 1-6 and 11. This claim element is not trivial but is linked to an important distinguishing property, namely, the greater stability of the claimed product over that described in the reference due to storage in intact cells. Accordingly, the claimed invention has different material with significantly different and improved properties compared to material described or inherent in the cited document.

Because the claimed dried cellular material is not found in the cited reference, removal of the anticipation rejection earnestly is requested.

Claim 11 depends from claim 1 and helps bring the claims into condition for allowance by clarifying claim terms via the doctrine of claim differentiation. Claim 11 describes a type of material recited in claim 1, that has been further processed by a water rinse step prior to the drying step that creates the cellular material. This added step provides further meaning to the term "culture precipitate" by showing how the

precipitate may be handled. Consideration and allowance of this dependent claim courteously is solicited.

Conclusion:

In view of the foregoing remarks and amendments, reconsideration and allowance of the remaining claims are requested. If any issues remain that could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner respectfully is requested to contact the undersigned.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

MARKED UP COPY OF CLAIMS:

1. A pigment-containing cellular substance for feed additives comprising a microorganism culture precipitate which contains at least 3 mass % carotenoid compounds prepared by a process of concentration by centrifugation or filtration and drying, with leaving only the cell membrane and cell wall intact.
2. The pigment-containing cellular substance for feed additives according to claim 1, wherein at least 40 mass % of the carotenoid compounds is astaxanthin.
3. The pigment-containing cellular substance for feed additives according to claim 1, wherein a DNA nucleotide sequence corresponding to 16S ribosomal RNA of the microorganism in the microorganism culture precipitate has at least 98% homology with the nucleotide sequence as shown in SEQ ID NO:1.
4. The pigment-containing cellular substance for feed additives according to claim 3, wherein the microorganism in the microorganism culture precipitate is E-396 strain or a mutant thereof.
5. The pigment-containing cellular substance for feed additives according to claim 2, wherein a DNA nucleotide sequence corresponding to 16S ribosomal RNA of the microorganism in the microorganism culture precipitate has at least 98% homology with the nucleotide sequence as shown in SEQ ID NO:1.
6. The pigment-containing cellular substance for feed additives according to claim 5, wherein the microorganism in the microorganism culture precipitate is E-396 strain or a mutant thereof.